

In the Claims

1 1. (currently amended) A circuit for protecting devices in an RF power amplifier  
2 comprising:  
3 a peak detector coupled to an output of the power amplifier for detecting peak voltages at the  
4 output of the power amplifier, wherein the peak detector further comprises:  
5 a first peak detector having an input coupled to the output of the power amplifier;  
6 a second peak detector having an input coupled to a reference tone; and  
7 control circuitry coupled to the peak detector and to the power amplifier for controlling the gain  
8 of the power amplifier, wherein the control circuitry decreases the gain of the power  
9 amplifier when the peak detector detects a voltage above a voltage threshold.

1 Claim 2 (cancelled)

1 3. (currently amended) The circuit of claim 1 ~~claim 2~~, wherein outputs of the first and  
2 second peak detectors are combined to provide a peak detection signal to the control circuitry.

1 4. (original) The circuit of claim 3, wherein the first and second peak detectors are matched.

1 5. (original) The circuit of claim 3, wherein the outputs of the first and second peak detectors  
2 are combined by subtracting the output of the second peak detector from the output of the first  
3 peak detector.

1 6. (original) The circuit of claim 3, further comprising a divider circuit coupled between the  
2 first peak detector and the output of the power amplifier.

1 7. (currently amended) The circuit of claim 6 ~~claim 1~~, wherein the divider circuit is  
2 comprised of a first and second capacitor coupled between the output of the power amplifier and  
3 ground.

1 8. (original) The circuit of claim 1, further comprising a power detector coupled to the output  
2 of the power amplifier and to the control circuitry for detecting the output power of the power  
3 amplifier.

1 9. (currently amended) A circuit comprising:  
2 an RF power amplifier having an input and an output;  
3 a peak detector coupled to the power amplifier for detecting a peak voltage at a node of the  
4 power amplifier, wherein the peak detector is comprised of first and second peak  
5 detectors; and  
6 power control circuitry coupled to the peak detector and to the power amplifier for controlling  
7 the gain of the power amplifier, wherein the power control circuitry limits the power at  
8 the output of the power amplifier when the peak detector detects a peak voltage greater  
9 than a threshold voltage.

1 Claim 10 (canceled)

1 11. (currently amended) The circuit of claim 9 ~~claim 10~~, wherein the first peak detector is  
2 coupled to the output of the power amplifier and the second peak detector is coupled to a  
3 reference tone.

1 Claim 12 (original) The circuit of claim 11, wherein the first and second peak detectors are  
2 matched.

1 13. (original) The circuit of claim 9, further comprising a power detector coupled to the output  
2 of the power amplifier and to the power control circuitry for detecting the output power of the  
3 power amplifier.

1 14. (currently amended) A method of protecting devices in an RF power amplifier  
2 comprising the steps of:  
3 detecting a peak voltage at a first node of the power amplifier, wherein the peak voltage is  
4 detected using the steps of:  
5 providing a first peak detector coupled to the output of the power amplifier; and  
6 providing a second peak detector coupled to a reference tone;  
7 determining whether the detected peak voltage is higher than a threshold voltage; and  
8 if it is determined that the detected peak voltage is higher than the threshold voltage, decreasing  
9 the gain of the power amplifier.

1 15. (original) The method of claim 14, further comprising the step of detecting the output power  
2 of the power amplifier.

1 16. (original) The method of claim 15, wherein the gain of the power amplifier is increased if  
2 the detected output power is less than a desired power level, and if the detected peak voltage is  
3 lower than the threshold voltage.

1 17. (original) The method of claim 15, wherein the gain of the power amplifier is decreased if  
2 the detected output power is greater than a desired power level, or if the detected peak voltage is  
3 higher than the threshold voltage.

1 Claim 18 (canceled)

1 19. (currently amended) The method of claim 14 ~~claim 18~~, wherein the first and second  
2 peak detectors are matched.

1 20. (currently amended) A method of controlling an RF power amplifier comprising the  
2 steps of:

3 detecting the output power of the RF power amplifier;

4 detecting a peak voltage at a first node of the power amplifier, wherein the step of detecting a

5 peak voltage further comprises the steps of:

6 providing a first peak detector coupled to the power amplifier;

7 providing a second peak detector coupled to a reference tone; and

8 combining the outputs of the first and second peak detectors;

9 increasing the gain of the power amplifier if the detected output power is less than a desired

10 output power level and if the detected peak voltage does not exceed a threshold voltage;

11 and

12 decreasing the gain of the power amplifier if the detected output power is greater than the desired

13 output power level or if the detected peak voltage exceeds a threshold voltage.

1 Claims 21-22 (canceled)

1 23. (currently amended) The method of claim 20 ~~claim 22~~, wherein the first peak detector  
2 and the second peak detector are matched.

1 24. (currently amended) The method of claim 20 ~~claim 22~~, wherein the outputs of the first  
2 and second peak detectors are combined by subtracting the output of the second peak detector  
3 from the output of the first peak detector.